

AR53



1968  
ANNUAL REPORT

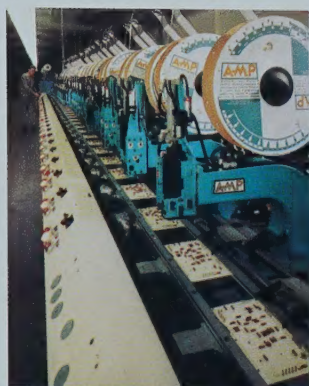
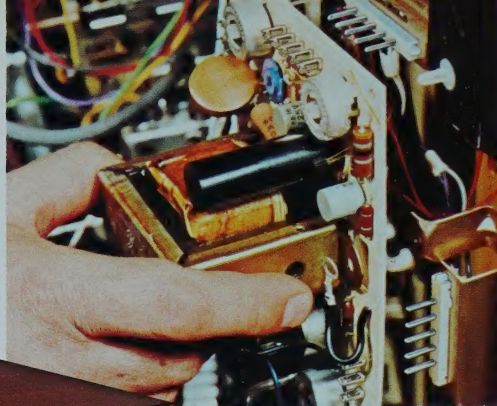
**AMP**  
INCORPORATED  
*Pamcor, Inc.*

AMP

AMP

terminals • connectors • splices •  
electrical / electronic components •  
interconnection products • manual  
and power tools • programming  
systems and devices • automatic  
machines • mechanical products





**THESE AMP MACHINES** are used in the production of Motorola Quasar color TV sets. AMP and Motorola engineers designed this complex, 25-machine conveyor line that applies thousands of AMP contacts per hour. By using several hundred AMPMODU post and receptacle contacts in each TV set, circuit boards become pluggable modules that speed up assembly and greatly simplify field servicing. Both the modular approach and automated application of connections are vital areas in which AMP is becoming increasingly involved—not only in the TV industry, but in the entire field of electronics.



# Corporate Profile

## PRODUCTS



Terminals & Splices



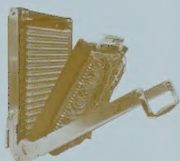
Connectors



Interconnection Systems



Tooling



Programming Systems



"Power Packages"

**GENERAL**—AMP Incorporated, founded in 1941, has its headquarters in Harrisburg, Pennsylvania. It has a Puerto Rican manufacturing affiliate, Pamcor, Inc., owned by identical shareholders. AMP now has 12 wholly owned subsidiaries: marketing companies in the United States and Canada; and manufacturing and sales subsidiaries in Mexico, Australia, Japan and seven European countries—France, Great Britain, Holland, Italy, West Germany, Spain and Sweden . . . . . 1

**HIGHLIGHTS AND PRESIDENT'S LETTER**—Sales up 14% to a record \$167.2 million; net income up 19% to a new high of \$16.2 million or \$1.33 per share . . . . . 2

**TEN YEAR SUMMARY AND FINANCIAL**—At December 31, 1968, assets of \$133.2 million, long-term debt of \$13.5 million and shareholders' equity of \$85.6 million . . . . . 4

**OPERATIONS**—The major portion of AMP's research, engineering and manufacturing facilities are within a fifty-mile radius of its General Offices at Harrisburg, Pennsylvania. Other operating facilities are located in North Carolina, Florida, and at the various subsidiary locations . . . . . 6

**MARKETS**—Throughout the world, AMP products are marketed directly to thousands of customers for use in the manufacture, maintenance and repair of the products and equipment of most industries. Over 50,000 customers in widely diversified electrical/electronic markets are served here and abroad . . . . . 7

**PRODUCTS**—AMP is a leading producer of solderless terminals, splices, multiple and coaxial connectors and other wiring devices, and the application tooling to pressure-crimp these devices to electric wires. It also produces patchcord and card programming systems, capacitor products, and other electronic components. There are over 30,000 types and sizes of AMP products . . . . . 14

**FINANCIAL STATEMENTS**—All statements and statistics, unless otherwise noted, include AMP, its subsidiaries and, its affiliate, Pamcor, Inc. . . . . 20

**CORPORATE DATA** . . . . . 24

## MARKETS



Aerospace & Military Electronics



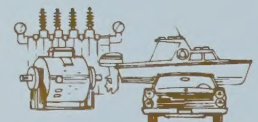
Commercial Electronics



Computer & Data Processing



Consumer Goods



Electrical & Transportation



Maintenance, Modernization & Construction



## Highlights

### FOR THE YEAR

	1968	1967	1966
Net sales . . . . .	\$167,172,000	\$146,469,000	\$141,817,000
Income before income taxes . . . . .	\$ 31,309,000	\$ 23,883,000	\$ 27,464,000
Net income . . . . .	\$ 16,227,000	\$ 13,653,000 <sup>(1)</sup>	\$ 15,025,000
Per share . . . . .	<b>\$1.33</b>	<b>\$1.12<sup>(1)</sup></b>	<b>\$1.23<sup>(2)</sup></b>
Cash dividends . . . . .	\$ 4,887,000	\$ 4,391,000	\$ 3,652,000
Per share . . . . .	<b>40¢</b>	<b>36¢</b>	<b>30¢<sup>(2)</sup></b>
Earnings reinvested in the business . .	\$ 11,340,000	\$ 9,262,000	\$ 11,373,000
Capital expenditures . . . . .	\$ 8,465,000	\$ 15,977,000	\$ 17,136,000
Depreciation . . . . .	\$ 8,497,000	\$ 6,966,000	\$ 5,609,000

### AT DECEMBER 31

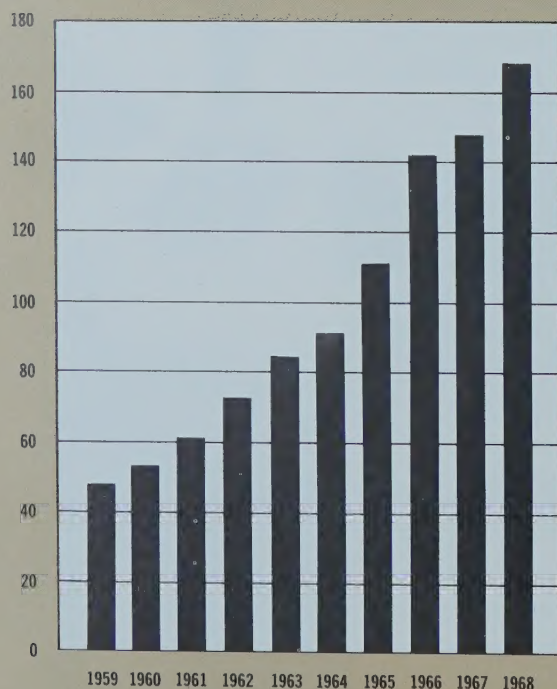
Backlog of unfilled orders . . . . .	\$ 34,500,000	\$ 29,000,000	\$ 30,400,000
Working capital . . . . .	\$ 56,390,000	\$ 46,022,000	\$ 35,257,000
Shareholders' equity . . . . .	\$ 85,597,000	\$ 73,741,000	\$ 64,283,000
Shares of stock outstanding . . . . .	12,225,718	12,206,441	12,172,312 <sup>(2)</sup>
Number of shareholders . . . . .	6,462	6,439	6,465
Number of employees . . . . .	8,785	8,260	8,735

(1) After a special nonrecurring loss on devaluation of foreign assets of \$481,000 or 4¢ per share.

(2) Restated to give effect to the 2-for-1 stock split in 1967.

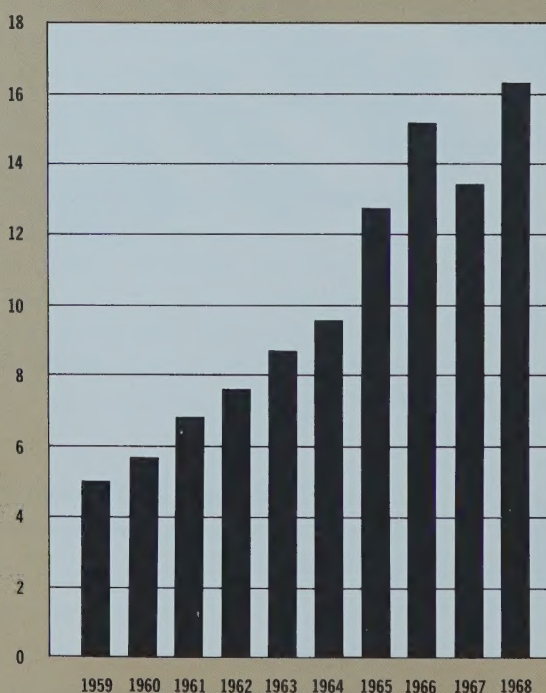
### SALES

\$ MILLIONS



### NET INCOME

\$ MILLIONS







S. S. Auchincloss, President (left); G. A. Ingalls, Vice Chairman (center); and U. A. Whitaker, Chairman (right).

## To the Shareholders

1968, a record year in both sales and earnings, was a period of good solid progress for AMP. Sales rose 14% in 1968 to a record \$167.2 million compared to \$146.5 million in 1967.

Despite the new 10% U. S. surtax, net income rose 19% to a record \$16.2 million or \$1.33 per share in 1968 compared to \$1.12 per share in 1967. Income before income taxes and before the devaluation loss in 1967 showed even greater gains—31% above 1967 and 14% above 1966.

The backlog of unfilled orders more than kept pace with the sales growth. It rose to \$34.5 million at year-end 1968 from \$29.0 million at year-end 1967.

The 1968 sales gain was broadly distributed with gains in almost all of our markets, particularly the consumer-oriented markets and, later in the year, in our large computer and data processing accounts. Both domestic and international operations showed growth in sales and net income in 1968. The growth rate of our international subsidiaries was, as usual, higher.

As announced previously, there were several organizational changes made in 1968. Mr. C. J. Fredricksen, formerly Vice President-Treasurer, was elected Vice President and Chief Financial Officer. Mr. Walter F. Raab, previously Assistant Treasurer, was elected Treasurer. Also, two divisional vice presidents were appointed. Mr. Gerald F. Englehart, formerly General Manager, European Operations, became Vice President, International Division. Mr. Willard A. Smith, previously Vice President, Automatic Machine Products, was appointed Vice President, European Operations. Mr. Marshall M. Holcombe, Vice President, General Patent Counsel, retired as of March 1, 1969, but will continue as a part-time consultant to the company.

1968 capital expenditures of \$8.5 million were relatively low in comparison to the \$16.0 million in 1967 and record \$17.1 million in 1966 when we were increasing our floor space by over 40%. Therefore, expenditures in 1968 included very little for buildings as compared to the expenditures for equipment which were divided about equally between equipment added to our own facilities and application machines provided to our customers. Capital expenditures planned for 1969 may approach the previous highs. Considering our strong financial position we will have no problem providing funds for these higher expenditures.

Again this year we have used the front cover of the report to emphasize AMP's broadening capabilities in providing customers with complex, labor-saving application machines. This is a good example of the degree of automation which can be achieved by working closely with a customer and utilizing the specialized know-how of both companies.

The creation of unique automated production equipment is also becoming increasingly important and is vital to the success of a new product program. In addition to cost savings, highly automated processes help attain the uniform quality and high production speeds required when handling such minute sizes and great quantities.

The long-term outlook is as good as ever. The good progress of many of the new product programs initiated in recent years reaffirms our confidence in the AMP approach to growth. We believe AMP is ideally situated to fully participate in the steadily growing use of electrical and electronic equipment in modern life. In addition, our capabilities in precision metal forming, metal plating, plastic molding, automated assembly and application tooling should have very broad application beyond the specific fields in which we are now engaged. Our expanding markets and constant introduction of new products should continue to produce steady year-to-year growth except when interrupted by unfavorable economic conditions.

The immediate outlook is good. While there are economic uncertainties in a number of sectors here and abroad which could affect AMP, the outlook for 1969 seems favorable, and we expect another year of further growth.

We again wish to thank our employees, customers and suppliers for their fine contributions to our past growth record and future potential.

Sincerely,

U. A. WHITAKER  
Chairman of the Board

S. S. AUCHINCLOSS  
President and  
Chief Executive Officer

March 13, 1969



# Ten Year Summary of Financial Data

(Dollars in thousands)

	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959
<i>For The Year—</i>										
NET SALES	\$167,172	\$146,469	\$141,817	\$110,942	\$91,676	\$82,835	\$73,233	\$61,163	\$55,158	\$47,555
COST OF SALES	95,612	85,813	81,072	62,000	50,322	45,987	39,245	33,130	30,356	25,217
GROSS INCOME	71,560	60,656	60,745	48,942	41,354	36,848	33,988	28,033	24,802	22,338
SELLING & GENERAL, ETC.	40,251	36,773	33,281	26,426	22,586	20,796	18,743	15,773	14,024	12,834
INCOME BEFORE INCOME TAXES AND LOSS ON DEVALUATION	31,309	23,883	27,464	22,516	18,768	16,052	15,245	12,260	10,778	9,504
INCOME TAXES	15,082	9,749	12,439	10,068	9,045	7,510	7,471	5,605	4,965	4,508
INCOME BEFORE LOSS ON DEVALUATION	16,227	14,134	15,025	12,448	9,723	8,542	7,774	6,655	5,813	4,996
LOSS ON DEVALUATION OF FOREIGN ASSETS	—	481	—	—	—	—	—	—	—	—
NET INCOME	\$ 16,227	\$ 13,653	\$ 15,025	\$ 12,448	\$ 9,723	\$ 8,542	\$ 7,774	\$ 6,655	\$ 5,813	\$ 4,996
Per Share*	\$ 1.33	\$ 1.12	\$ 1.23	\$ 1.02	80¢	70¢	64¢	55¢	48¢	41¢
CASH DIVIDENDS	\$ 4,887	\$ 4,391	\$ 3,652	\$ 3,037	\$ 2,729	\$ 2,423	\$ 2,119	\$ 1,816	\$ 1,614	\$ 1,210
Per Share*	40¢	36¢	30¢	25¢	22¢	20¢	17¢	15¢	13¢	10¢
CAPITAL EXPENDITURES	\$ 8,465	\$ 15,977	\$ 17,136	\$ 11,817	\$ 6,195	\$ 7,891	\$ 5,141	\$ 3,507	\$ 4,524	\$ 3,099
DEPRECIATION	\$ 8,497	\$ 6,966	\$ 5,609	\$ 4,178	\$ 3,615	\$ 3,070	\$ 2,696	\$ 2,201	\$ 1,779	\$ 1,472
<i>At December 31—</i>										
WORKING CAPITAL	\$ 56,390	\$ 46,022	\$ 35,257	\$ 28,645	\$26,513	\$21,645	\$19,398	\$16,019	\$12,349	\$10,773
PROPERTY, PLANT AND EQUIPMENT, NET	\$ 46,086	\$ 47,068	\$ 38,713	\$ 27,543	\$20,125	\$17,839	\$13,165	\$10,927	\$ 9,757	\$ 7,152
LONG-TERM DEBT	\$ 13,535	\$ 15,534	\$ 6,200	\$ 400	\$ 500	\$ 600	\$ 700	\$ 800	\$ 900	\$ 1,000
SHAREHOLDERS' EQUITY	\$ 85,597	\$ 73,741	\$ 64,283	\$ 53,026	\$43,671	\$36,660	\$30,501	\$24,921	\$20,080	\$15,881

\*Based on shares outstanding at the respective year-ends after retroactively giving effect to the 2-for-1 stock split in 1967 and the 3-for-1 stock split in 1961.



## Financial

**AMP'S FINANCIAL POSITION** improved as we returned from a fairly level year in 1967 to a growth rate in 1968 more in line with our longer-term progress. On a sales increase of 14%, 1968 net income rose 19%. This was after providing approximately \$1,100,000 (9¢ per share) for the 10% U. S. surtax first enacted in 1968. On the other hand, net income for the prior year 1967 was reduced by a \$481,000 (4¢ per share) loss on devaluation of foreign assets. However, pre-tax income, that is income before deducting all income taxes as well as the devaluation loss, was 31% higher in 1968 than in 1967.

*Shareholders' Equity* increased 16% to \$85.6 million principally through the reinvestment of earnings not distributed as dividend payments. The Reserve for Contingencies Applicable to Foreign Operations (\$553,000), unchanged since its appropriation in 1959, was no longer meaningful and was, therefore, returned to Retained Earnings.

*Working Capital* again rose substantially, increasing 23% during 1968 to \$56.4 million. The ratio of current assets to current liabilities continued strong at 2.8 to 1, almost unchanged from a year ago.

*Debt*, both current and long-term, decreased slightly during 1968 from \$20.5 million to \$19.8 million. This reflected a reduction of \$1.2 million in our domestic debt and a rather small increase of \$.5 million in our overseas debt. Considering the sizable increase in our marketable securities, the net "debt-cash" position improved significantly, and no new domestic debt or equity financing would seem necessary in the near future. Overseas we would expect to continue increasing our debt somewhat as we expand.

**CAPITAL EXPENDITURES** of \$8.5 million in 1968 were relatively low and reflected the small immediate need for additional space after the rather high capital expenditures of \$16 and \$17 million in 1967 and 1966. Expenditures planned for 1969 are expected to be well above the 1968 level, but may not reach the levels of 1967 and 1966.

**INCOME TAXES**—The increase in the effective tax rate over the 1967 level was, of course, due in part to the

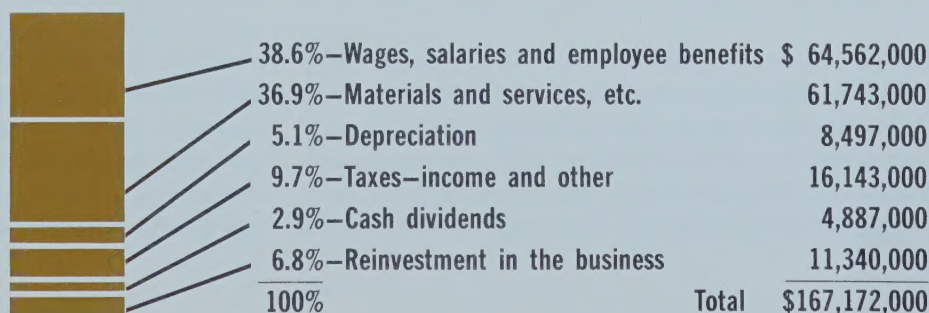
U. S. Federal surtax of 10% enacted during 1968 retroactive to January 1, 1968, which increased taxes by approximately \$1,100,000 or about 9¢ per share. Also, the additional pre-tax incomes above the 1967 levels, both here and abroad, were to a great degree subject to the maximum regular statutory corporate income tax rates—which in most cases were higher than our 1967 effective rates.

**DIVIDENDS**—The quarterly combined cash dividend of 12¢ per AMP Endorsed Share paid on March 3, 1969, (consisting of 9¢ from AMP and 3¢ from Pamcor) indicates an annual rate of 48¢ per share, or 20% above the 40¢ paid during 1968. This is the eleventh consecutive annual increase of more than 10% and the sixteenth consecutive annual increase.

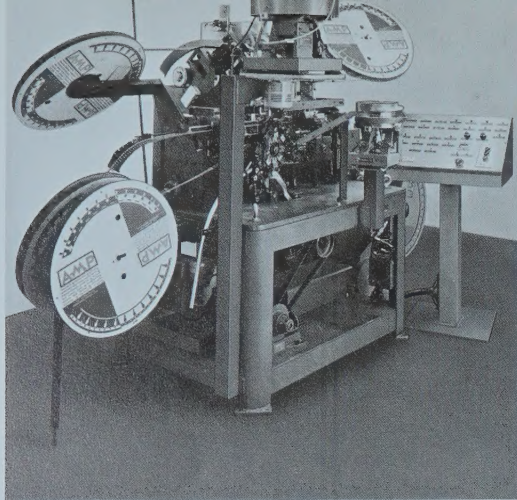
**THE SOURCE AND APPLICATION OF FUNDS** statement below provides a brief comparison of our financial activity for 1968 and 1967.

	1968	1967
	(in thousands)	
FUNDS WERE PROVIDED FROM—		
Income before		
devaluation loss . . . . .	\$16,227	\$14,134
Devaluation loss . . . . .	—	481
Net income . . . . .	16,227	13,653
Expenses not requiring current		
outlay of funds:		
Depreciation . . . . .	8,497	6,966
Deferred income taxes . .	(104)	(229)
Others . . . . .	659	1,278
	25,279	21,668
Increase in long-term debt . . .	—	9,334
Miscellaneous sources, net . . .	440	131
	<u>\$25,719</u>	<u>\$31,133</u>
AND WERE USED TO—		
Increase working capital . . . .	\$10,368	\$10,765
Acquire plant and equipment .	8,465	15,977
Decrease long-term debt . . . .	1,999	—
Pay dividends to shareholders.	4,887	4,391
	<u>\$25,719</u>	<u>\$31,133</u>

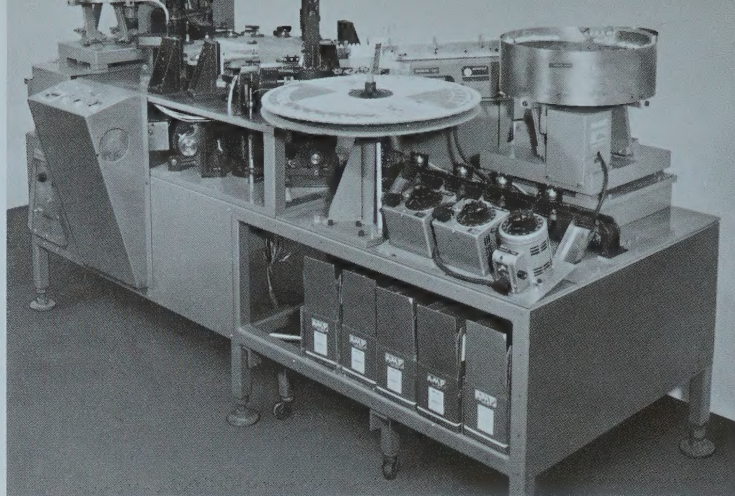
### How the 1968 Sales Dollars were used







One of several production machines created by AMP for the high-speed assembly of a number of tiny metal and plastic parts to form subminiature coaxial contacts.



A specially developed AMP production machine that automatically assembles and tests thousands of electrical switches per hour.

## Operations

During 1968, AMP continued to expand its technical capabilities as well as the capacity and efficiency of its facilities. In the past year this growth in facilities was largely in production equipment and in application tooling placed with customers—with fairly equal expenditures in both categories. Floor space rose only 2% to a record 2,350,000 sq. ft., because at the beginning of 1968 our production capacity was substantially higher than sales volume—and is still somewhat higher today.

For years AMP has been creating special equipment for metal forming, metal plating, plastic molding, and assembly operations. This ability to develop special production machinery has become an increasingly vital part of our new product programs in recent years. A similar high level of engineering imagination and skill must be focused on production problems as is required for the development of the product. The economic, as well as technical, parameters imposed on us as a component manufacturer often make the solution of the production problems as crucial as those of product design. Without the timely delivery of high-quality products at an economical price, a new product program could not become a success no matter how ingenious the product design may be.

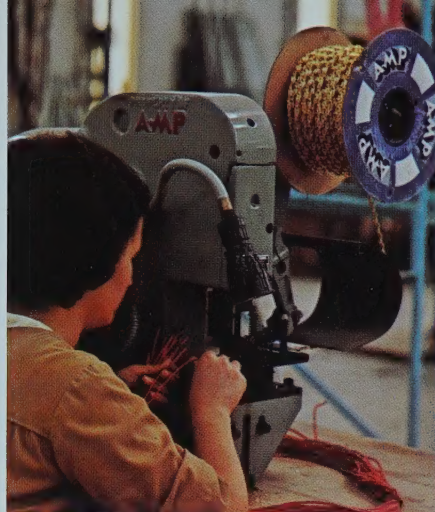
The pictures on this page show two recent examples of production engineering innovation. The COAXICON contact machine is one of three pieces of equipment developed to automate the combining of many small parts into complete pin and socket contacts. Thus we can provide the first pre-assembled, strip form coaxial contacts ever offered

in the industry. The switch assembly machine places the metal plunger, spring, and contacts into a plastic housing at high speed, then tests the switch and deposits it into a shipping carton. With this high degree of automation, we can supply extremely reliable switches at reasonable prices.

Through special machinery designed and built "in house," the assembly of connector contacts into housings has also become much more automated. Many of our connectors are now supplied with contacts pre-loaded into the housing for customer attachment to printed circuit boards or for point-to-point wiring of electronic panels. Similarly, we have been devising much faster methods of mounting AMP products onto plastic carrier tape for customer use with AMP-TAPETRONIC crimping machines and tools.

One of the most challenging assignments during 1968, and exemplifying the complexity of connector manufacturing today, was the creation of automated production facilities for an entirely new family of microminiature connectors for computer memory frame and integrated circuitry connections. The connector is shown on page 17. The tiny rear tabs of the gold-plated contacts are pre-loaded with solder to allow the customer to automate the attachment of the connector to his circuits. The pin and socket contacts are so small, and the solder deposit so minute, that hand operations would have required slow, delicate work under magnifying apparatus. We therefore built a complex, continuous process production line to clean the tab surface, apply flux, deposit exactly the right amount of solder, and place the contacts on reels ready for automated insertion into connector housings.





One of a number of AMP machines used by Electro-technicos Reunidos Lda, Lisbon, Portugal, to apply AMP products to wiring harnesses made for European automobiles.



A few of the customized maintenance kits and resale packages of AMP tools and terminals supplied to customers such as Allis-Chalmers, Ford Motor, W. T. Grant, International Harvester, Montgomery Ward, J. C. Penney, Volkswagen, and White Truck Division of White Motor Corporation.

## Marketing

We continued to widen the scope of our marketing services during 1968. In its field, AMP is unique in the breadth of coverage it gives its various product and market areas. We now provide connections for practically all of the different types of electrical and electronic conductors, and provide complete customer service to every industry having such needs. Equally important, this service is made available in virtually every significant industrial area in the free world.

As connection problems become more exacting, we find ourselves working even more closely with original equipment manufacturers, or "OEM's" for more extended periods of time to develop and produce new products and application tooling. There is a constant interchange between AMP and many of its customers concerning future design requirements, prototypes, testing, modifications, etc., that eventually leads to additional new products. Recently, for example, our close liaison with the avionics industry led to the development of several special connectors for the latest airborne requirements. Similarly, our extensive work with color TV manufacturers is providing them with modular interconnection systems that facilitate both production and customer field service. This same marketing approach is carried on in both the U.S. and overseas. In the U.S. it is spearheaded by a force of over 100 sales engineers backed up by field service engineers, product specialists, headquarters staff, customer training facilities, and operating divisions fully oriented toward the markets they serve.

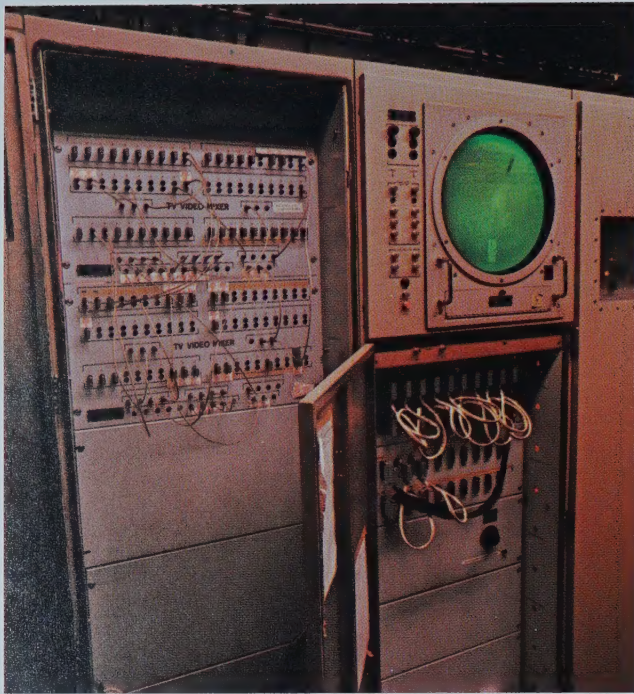
In addition to the "OEM" markets which account for most of our business, we also serve the increasingly important "after market." Each year more electrical maintenance

and repair activity is being done to keep the complex equipment of modern society in good working condition. We have been supplying growing amounts of AMP proprietary products for this purpose for many years. In the U.S. this is done through a wholly-owned subsidiary with a marketing organization of nearly 500 people (American Pamcor, Inc.), and overseas through the AMPLIVERSAL division of each of our international subsidiaries. Starting with areas such as industrial plant maintenance, shipyards, and railroads, we added airlines, trucking and bus companies, broadcasting companies, and educational and governmental institutions, which are making increased use of our products. More recently we have also been supplying the various public utility fields. This activity is described on pages 13 and 19.

In the last few years, and particularly in 1968, we have refined our merchandising technique of creating special kits of AMP products and application tools to meet the needs of specific customers such as Allis-Chalmers, Ford Motor, International Harvester, Volkswagen, and White Truck Division of White Motor Corporation. Another facet is the growing list of customers, such as W. T. Grant, Montgomery Ward, and J. C. Penney, to whom we supply customized resale packages of AMP tools and terminals to be merchandised under private label in thousands of retail outlets.

Our worldwide capabilities are a key factor in our deepening relationships with all types of large international customers. With AMP subsidiaries in the key industrial countries of the world, we can effectively supply connection products and services wherever needed.





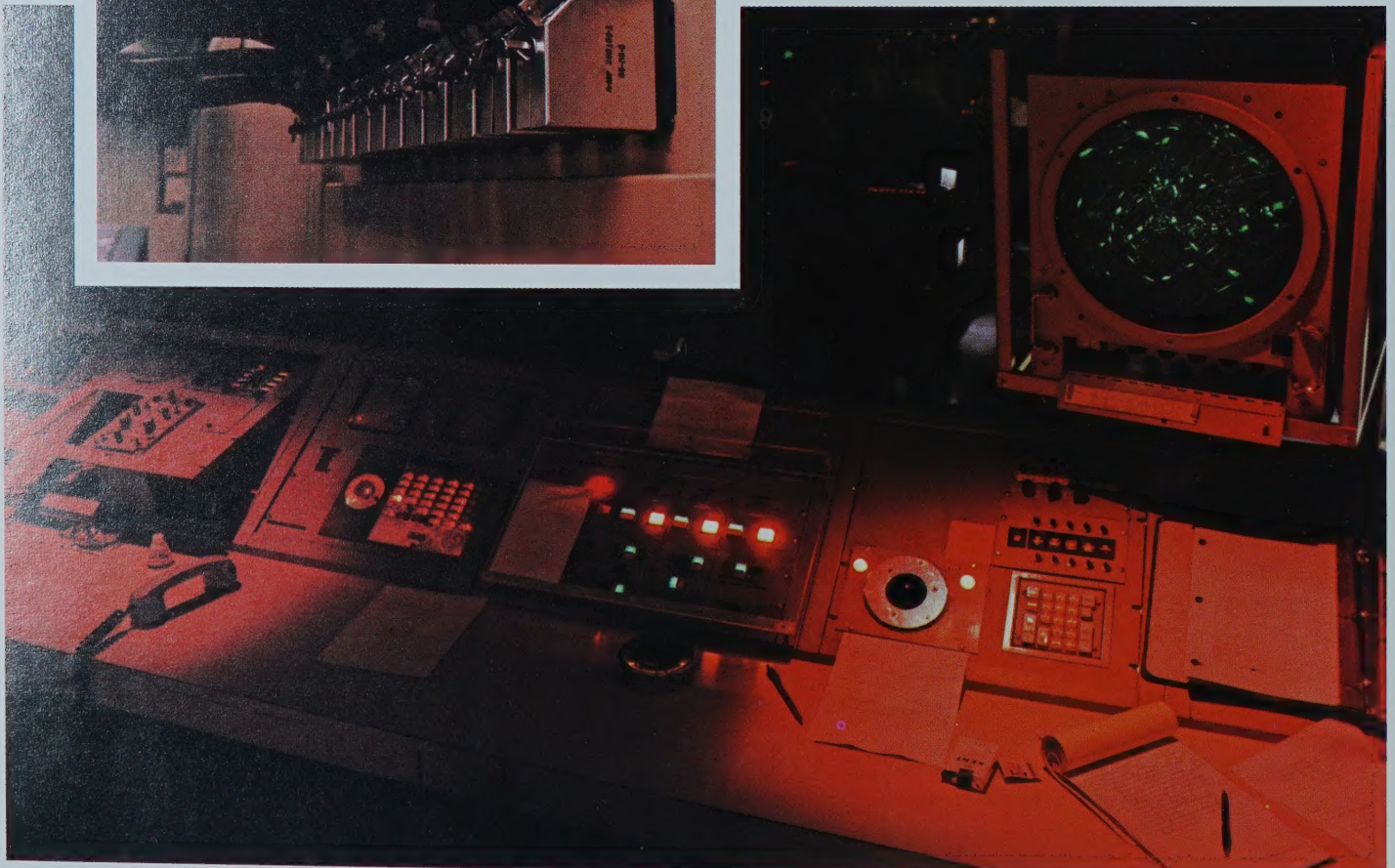
## AEROSPACE AND MILITARY ELECTRONICS

Commercial Aircraft • Business Aircraft • Military Aircraft • Avionics • Military Communications • Missiles • Defense Systems • Space Vehicles • Ground Support Equipment • Oceanography.

Far more passengers and freight require transportation each year. Thousands of additional planes, many larger and different from today's, will be needed in the next decade. To coordinate all this movement, concurrent progress will also be needed in both aircraft avionics equipment and in ground control operations. The air traffic control equipment shown here typifies the opportunities arising for AMP as each new development creates a need for more and better electrical connections. In response to this growing need, we have created a number of new products such as ARINC-type connectors, terminal junction block systems, high density connectors for printed circuit boards, and unique coaxial connectors. Today, we offer this field the broadest range of connection products available anywhere.

**Above**—AMP coaxial patch panels (left) and "M" series connectors (right) used in the Raytheon RBDE-5A radar scope equipment recently installed at New York's Kennedy Airport.

**Middle**—A few of the many "M" series connectors which, along with a number of other AMP products, are used throughout the Raytheon equipment.







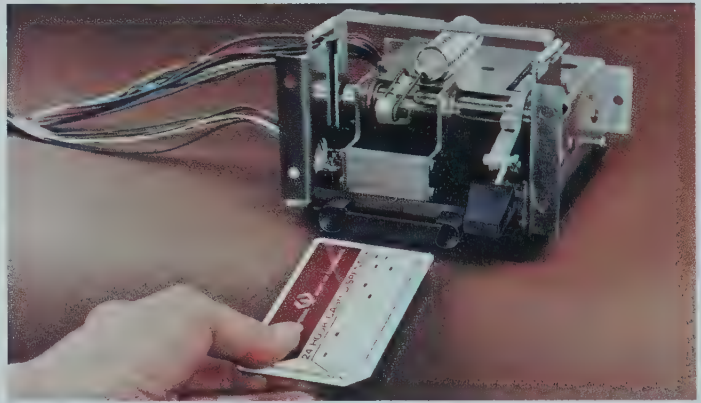
## COMMERCIAL AND INDUSTRIAL ELECTRONICS

Credit Systems • Business Machines • Quotation Systems • Communications • Numerical Controls • Production Control Systems • Process Controls • Instrumentation • Test Equipment • Medical Equipment • Educational Equipment • Security Systems.

The whole field of commercial and industrial electronics is deeply involved in the changing patterns of modern life. This is exemplified by the machines shown here which use AMP credit card readers, printed circuit connectors and several other AMP products.

**Right**—A credit card about to be inserted into an AMP card reader installed in an IDA (Identifying, Dispensing, and Accounting) Cash Dispenser developed by the Chubb-Mosler and Taylor organization. Ten dispensers have recently been put into operation in Toronto by the Canadian Imperial Bank of Commerce.

**Below**—“Programma 101” computer machines coming off the assembly line at Olivetti Underwood’s new Harrisburg, Pa. plant. Over 30 connectors supplied by AMP-USA permit the printed circuit boards to be plugged into a common base board in the rear unit. The American rear unit is then reliably joined to the Italian-made front unit by AMP connectors supplied to Olivetti in Italy by our Italian subsidiary.







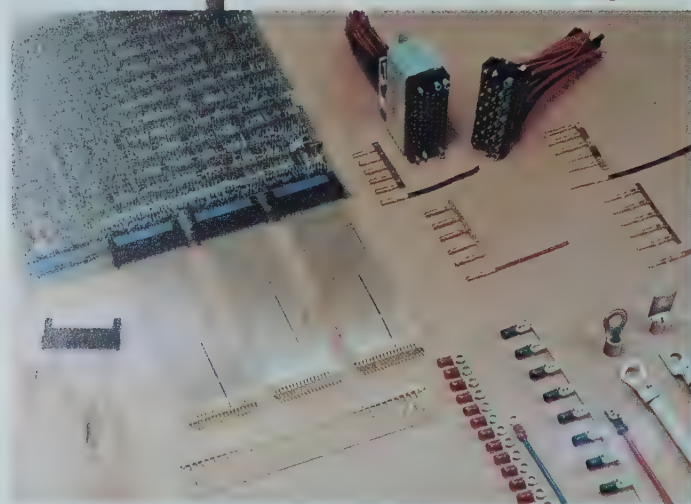
## COMPUTERS AND DATA PROCESSING

*Digital Computers • Analog Computers • Hybrid Computers • Data Entry Equipment • Printers • Visual Displays • Time-Sharing Equipment.*

The tremendous advances in the speed and capacity of computers have generated a pressing need for ever-faster and more efficient peripheral equipment for data input and output. A relatively new type of equipment permits direct entry of data from a keyboard onto a magnetic tape. The Sangamo DS 7100 shown here employs third generation integrated circuit logic and permits direct English alpha-numeric display of the data being recorded onto magnetic tape via the keyboard. As is true of the other sectors of the computer industry, virtually every producer in this fast-growing field uses AMP products.

**Left**—Sangamo Electric Company's New Data Station DS 7100 uses a number of AMP products—(left) AMP flat cable connectors mate with AMPMODU connectors mounted on a panel wired with TERMI-POINT posts and clips. (right) AMP PIDG, FASTON, AMPOWER and SOLISTRAND terminals, along with a 75-position "M" series connector with strip form pin and socket and coaxial contacts.

**Below**—An AMP facility where electronic panels are being produced for Sangamo and other customers. Panels incorporating thousands of special wiring posts are assembled and interconnected by the use of tape-programmed, numerically controlled TERMI-POINT wiring machines.







## CONSUMER GOODS

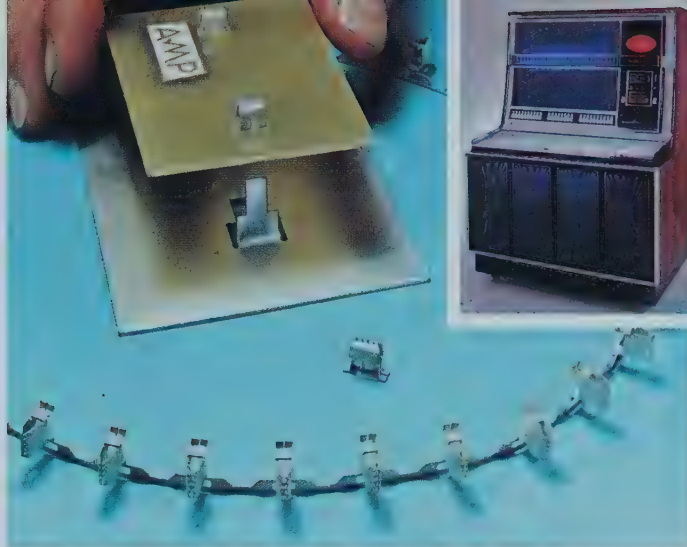
TV • Radio • Stereo • Tape Recorders • Organs • Washers • Dryers • Dishwashers • Refrigerators • Freezers • Room Air Conditioners • Humidifiers • Small Appliances • Power Tools • Vending and Amusement Equipment • Garden Equipment

The consumer goods field was the first industry for which we developed more automated electrical connections. Today, as the front cover story on AMPMODU machines points out, this industry continues to hold great potential for AMP in the electrical connection field. However, recently something new has been added. Since many of the same AMP skills are called for, this industry is now also turning to us for solution of mechanical connection problems.

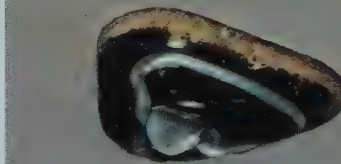
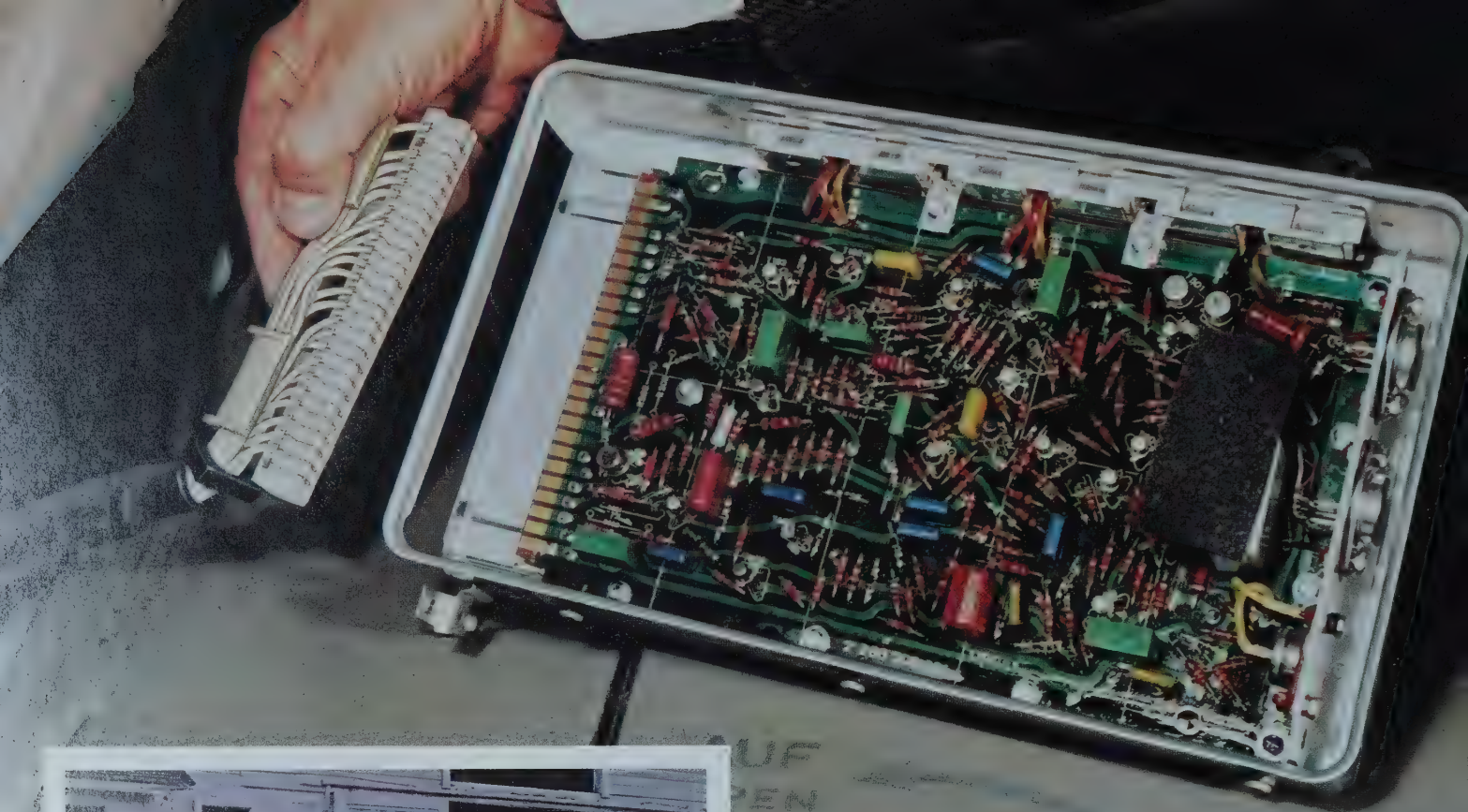
**Above**—AMP component module clips, supplied in strip form for machine application, secure printed circuit boards to the chassis in Seeburg coin-operated phonographs.

**Middle**—AMP plastic “stand-off” mounting clips hold circuit boards in place in H. H. Scott stereos.

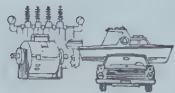
**Below**—A new type of reel-fed AMP machine in use at General Electric's portable TV production plant inserting AMP retaining springs into control knobs.







**Above**—A 25-position AMP edge connector provides the connections to the Bosch electronic fuel injection unit used in Volkswagen cars. A number of AMP terminals and contacts are also used in the Bosch test unit supplied to dealers.



#### TRANSPORTATION AND ELECTRICAL EQUIPMENT

Motors and Generators • Compressors • Refrigeration, Heating and Air Conditioning Equipment • Lighting Equipment • Transformers • Coils and Relays • Automobiles • Trucks • Busses • Rail and Rapid Transit Equipment • Farm Equipment • Material Handling Equipment.

For many years a significant "electrical" market for AMP, this market is becoming more and more "electronics" oriented. In the automotive field, a concern for passenger safety and comfort, performance, exhaust emission, reliability, and maintainability has prompted design of many new

electronic systems. This increases the number and, more importantly, the quality and reliability requirements of connections and, therefore, enlarges our potential in this market. The Bosch electronic fuel injection unit is presently used in Volkswagens and other foreign cars and is under consideration for possible use in U.S. cars. It is designed to greatly reduce the pollutants in the exhaust and give better engine performance. The vibration-proof, 25-position AMP connector, specially adapted to this application by our German subsidiary, is a good example of how we can participate in this new growth area in electronics.





A demonstration by an AMP product specialist of the various stages of an underground AMPACT connection. A light blow of the hammer actuates the powder cartridge in the AMPACT tool—driving the wedge connector together with up to 5,000 pounds of force. For underground installations the connection is then encased in a special sealant to protect it from ground water and dirt.



AMPACT connectors in use at Pennsylvania Electric Company



#### MAINTENANCE & REPAIR AND CONSTRUCTION

Electric Power Companies • Telephone Companies • CATV • Gas Companies • Airlines • Buslines • Trucking Companies • Railroads • Shipyards • Industrial Plant Maintenance • Repair Shops • Contractors • Federal, State & Local Government.

For many years the same AMP products sold to original equipment makers have also been made available to maintenance and repair users. In recent years, we have also developed special connection products and application tools for utility companies. To date, we have added a line of wedge-type connectors applied with a unique tool actuated by a powder cartridge for electric power line connections, pre-

insulated splices and machines for splicing telephone cable, CATV coaxial cable connectors, and crimpable fittings for connecting pipes and tubes used by gas companies and many other customers.

As shown above, in the electric utility industry the same light-weight, easy-to-use AMPACT tools and connectors used on overhead lines are now also used for "URD," or underground residential distribution, connections. Encased in a unique sealant material, the connections are impervious to ground water in vaults and direct burial applications.



## Product Review

Entry into a number of new product areas in preceding years laid the foundation for most of AMP's 1968 product development activity. After our initial entry into a product field, extensive development work is required to broaden the product range and meet constantly changing user requirements. This demands the steady addition of new configurations and sizes in existing product lines, as well as entirely new lines. For example, over 200 part numbers were assigned in 1968 to new sizes and shapes of housings, contacts, and accessories for "M" series connectors—yet the basic product line is now some ten years old. Similarly, in the printed circuit connector field, nearly as many new product lines were introduced or under development in 1968 as existed prior to 1968, although we have been working in this area for a decade also.

Another growing area of development work is application tooling. In each product field, a widening array of tools and machines is being made available to customers for applying existing and new AMP products.

Still another facet of product development programs is the special production machines that may have to be created to produce a new product. This part of our research, development and engineering activity, described in the Operations section of this report, is becoming more important.

These four aspects—entry into entirely new product fields, expanding the product scope within a product field, providing a range of associated application tooling, and creating special production machinery—are the basic segments of our research, development and engineering expenditures. In 1968, almost \$17 million (10% of sales) was spent for the creation and application of new and improved products and processes. At AMP, many hundreds of employees are engaged in this vital activity, and over 1,300 U.S. and 7,500 corresponding foreign patents are now issued or pending.

A review of development activity during the year shows a number of trends continuing to emerge. Further miniaturization in electronics and a growing concern for modularization in TV, stereo, business machines, and other electronic equipment, prompted new types of subminiature connectors, printed circuit board connectors, interconnection systems, and other electronic packaging devices. The increasing need for further mechanizing and automating the connection process spurred development of a number of machines and tools during 1968.

**Terminals, Splices, and Multiple Connectors.** Despite (or more accurately, because of) the advent of printed circuit boards over a decade ago and integrated circuitry over five years ago, more wire is being used today than ever before. There is, therefore, a continuing need for new types of terminals and splices, as well as for even better application tools and machines. For example, the twenty-year-old product line of FASTON disconnectible terminals continues to broaden in scope to meet new requirements such as splash-proof applications. The profusion of small appliances created a demand for a new type of brush contact that lowers costs through the use of a new type of AMP machine that facilitates attachment of the contact to the motor brush assembly. Similarly, the great amount of shielded wire used today prompted introduction of entirely new TERMASHIELD ferrules and splices. The new ferrules are supplied in strip form to provide much-needed automation for this type of connection. The splices are simpler, more compact, less costly, and are used in growing quantities.

In response to the growing use of solid and stranded aluminum wire, we introduced COPALUM terminals and splices which utilize a new crimp containing a perforated brass insert. This industry-accepted method is the first effective means of terminating aluminum wire without the use of inhibitor compounds previously required to prevent harmful oxidation.

The trend toward modular terminal junction block systems continues in the aerospace field and should spread into commercial fields as well. Thus we offer both an environmentally-sealed military specification version, another sealed version for special aerospace uses, and unsealed versions for lower-cost commercial uses. The crimpable contacts plug into track-mounted modules to give substantial weight and space savings.

A number of new special-purpose, high-voltage, corona-resistant connectors were developed for applications such as avionic gear, business machines, and laboratory equipment. This is a relatively new connector area in which our extensive experience in both high-voltage "power packages" and electronic connectors can combine to provide unique responses to exacting customer requirements.

Industry concern with weight and space savings continues to spur electronic miniaturization and prompted AMP to develop the High Density Rectangular, or "HDR", subminiature connector. Starting with the release of one rack and panel configuration a year ago, the product family now includes several more of that design as well as the first of a low-cost cylindrical version. This connector family





New AMP multiple connectors: (left) WJH corona-resistant connectors used with high-voltage "power packages," (middle) "HDR" connectors for both aerospace and commercial electronic equipment, and (right) ARINC-type connectors in coaxial contact and high density versions for avionic equipment.

is the first of its type to offer the close spacing of .100 inch between centers with contacts provided in strip form for machine application to wires. HDR connectors will also be available with contact posts to permit point-to-point wiring with TERMI-POINT machines and tools.

The aerospace field is making increased use of crimp contact, environmentally-sealed, rack and panel connectors for installation of avionic gear in commercial planes. We recently pioneered the development of these connectors in response to new ARINC specifications. During 1968 we worked closely with aircraft builders, avionic equipment manufacturers and major airlines in expanding the product family and placing it into initial use. For example, high density and coaxial contact versions were added for broader coverage of customer needs.

To provide much faster application rates than the hand tools normally used in the aircraft industry, a very compact, sturdy "stripper-crimper" machine has been developed. Shown on this page, it will handle terminal junction and ARINC-type contacts, as well as other tape-mounted pin and socket contacts requiring a specified military crimp.

A new AMP applying machine (shown below on this page) for terminating flexible flat cable should encourage use of



This compact new AMP "stripper-crimper" machine applies contacts to wires for use in ARINC-type connectors, terminal junction block systems, and other connectors used primarily in the aerospace field. The machine both strips the wire and applies the contact.



This new AMP machine applies two contacts per second to flexible flat cable having as many as 33 conductors.





this type of conductor in both commercial and military electronic fields. The machine indexes automatically across the cable, applying a new type of AMP contact at the rate of two per second. With the contacts snapped into a housing, the cable can then be attached to another cable, to wires, or to a printed circuit board by mating with various other types of AMP connectors.

**Printed Circuit Connectors, Interconnection Systems, Electronic Packaging Devices.** Economy, contact density, and maintainability were prime considerations in the design of recent AMP connection devices in this area. For one- and two-sided printed circuit boards, several new board-to-board connectors offer extremely low costs per connection. One such connector offers the lowest-priced, crimp-type printed circuit edge connections available today. For the high-density connections increasingly needed on memory planes and multilayer boards, an entirely new microminiature connector family offers an unparalleled combination of features. The unique construction of the receptacle contact allows very close contact spacing (as low as .025 inch when staggered), permits great misalignment tolerance, and provides excellent electrical performance. The tabs are pre-loaded with solder to facilitate automatic attachment of connectors to the frame, board, or cable.

Another way that we are involved in this fast-changing area is in providing the immediate connections needed to install circuitry components reliably into place. A wide array of AMPMODU products as well as other newer AMP interconnection systems—both connection devices and application machines—are now available. In addition, a variety of minute, spring-loaded socket contacts are offered and can either be incorporated into various AMP recep-

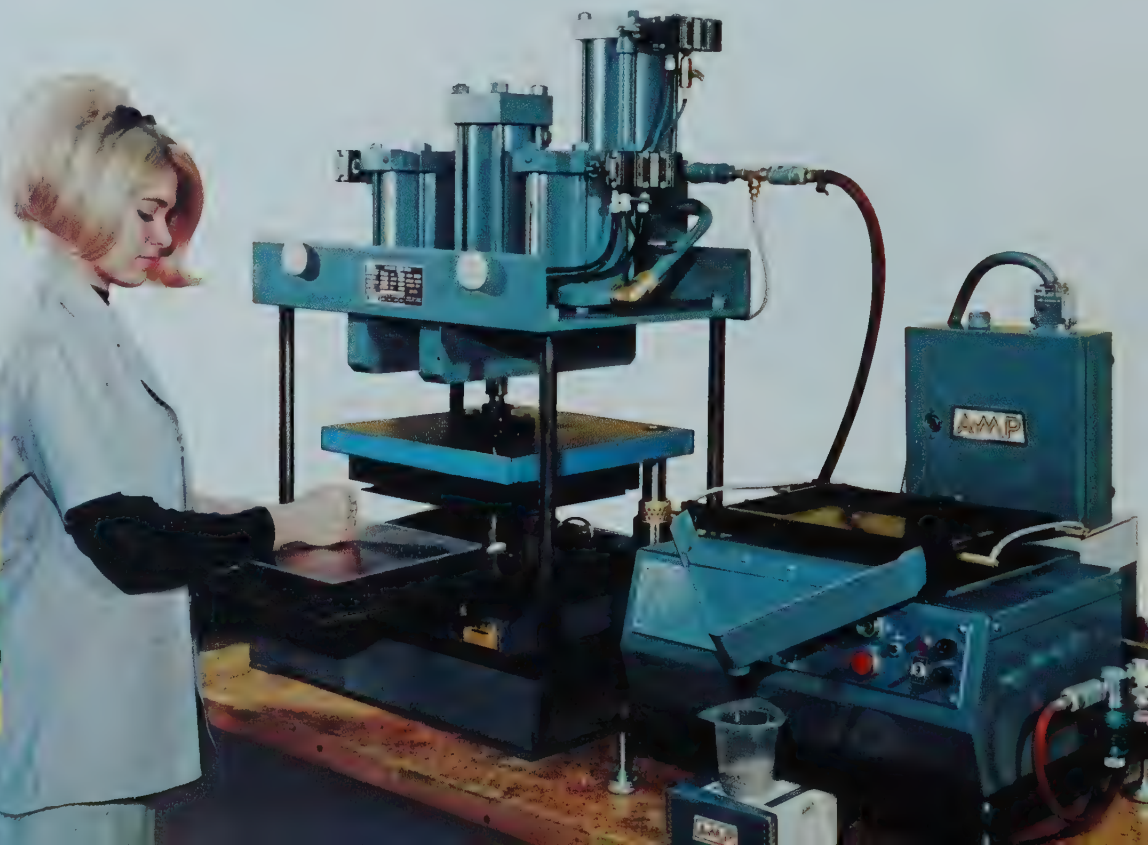
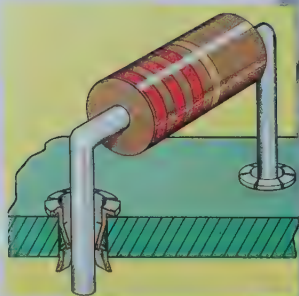
tacle headers or embedded directly in a circuit board or wiring panel. This permits transistors, resistors, integrated circuit units, and other components to be connected to printed circuits and, if desired, interconnected by point-to-point wiring through the use of special post contacts.

Where pluggability is not needed, there is still the problem of holding components securely in place until the board is "dip" or "wave" soldered. To do this economically, we recently introduced a new method of installing hole liners. These tiny AMP devices (several thousand in a thimble) are designed to fall easily into the holes in a vibrating template. The filled template is placed over the circuit board, and a stroke of a press embeds all the hole liners into the specified holes in the board simultaneously.

TERMI-POINT wiring devices are steadily gaining acceptance. They offer distinct advantages in point-to-point wiring of electronic panels, including the ability to connect many types of wire and to make wiring modifications easily. Several of the numerically-controlled, tape-programmed wiring machines (similar to the ones shown on page 10) were placed in operation in customers' plants during 1968, and others are on order. Several thousand pneumatic applying tools are being used by customers in many different markets. Through continued expansion of product families, we now have more than a dozen types of connectors with posts that accept TERMI-POINT wiring clips. We also wire customer panels on machines in our plant—providing "single source responsibility" for completely wired and tested panels ready for final customer installation.

**Coaxial Cable Connections.** The increasing use of coaxial circuits in electronic equipment provides ample oppor-

To facilitate attaching components to printed circuit boards, this new AMP machine vibrates hundreds of minute "hole liners" into position on a template and then presses them simultaneously into the board.



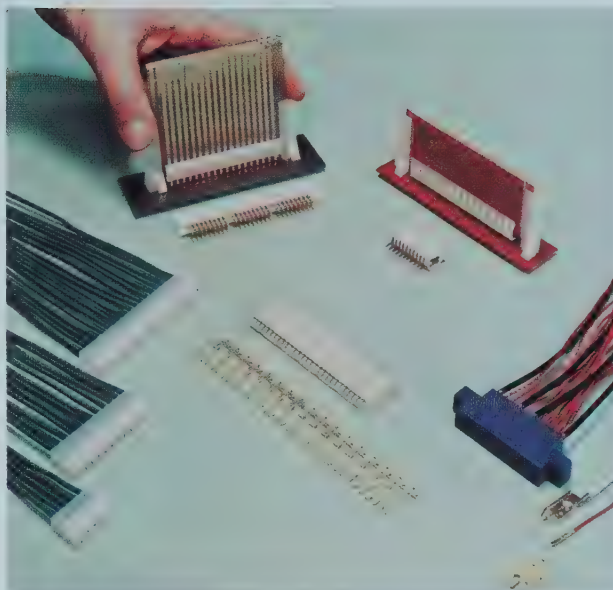


tunity for development of new AMP products. Recent activity includes new types of both single and multiple connectors, such as crimpable miniature "SMA"-type connectors for small semi-rigid cables, and the quick-latching hemaphroditic multiple connector shown on this page. The first multi-cable connector for semi-rigid cable used in microwave transmission was developed. We have also proposed new connectors for air dielectric coaxial cable used as trunk lines in CATV systems and telephone "long lines." The first crimpable "WWE"-type contact was released for use in ARINC-type multiple connectors for avionic gear.

Just over a year ago we introduced the first automated method of making crimped coaxial connections. Pre-assembled subminiature COAXICON contacts on reels are applied by the customer using AMP machines that strip the cable and then crimp the contact to both the center and outer conductors simultaneously. Customer use of this product is, of course, dependent upon more widespread use of subminiature flexible coaxial cable in electronic equipment. In contrast, a very recent innovation, a new approach for small "SMB"- and "SMC"-type single connectors, offers long-awaited automation to an immediate market. The connector assembly has been reduced to only three pieces and one of them, the tiny center contact, is tape-mounted and fed for automatic crimping to the center conductor of the cable. With these recent breakthroughs, we offer unequaled automation that provides both uniform reliability and substantial labor savings.

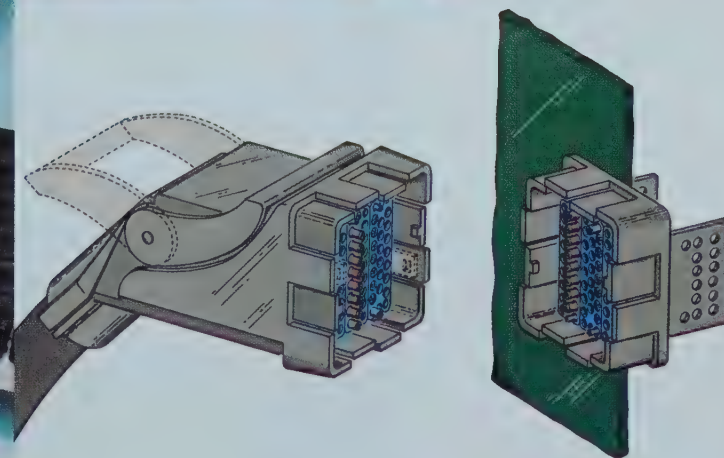
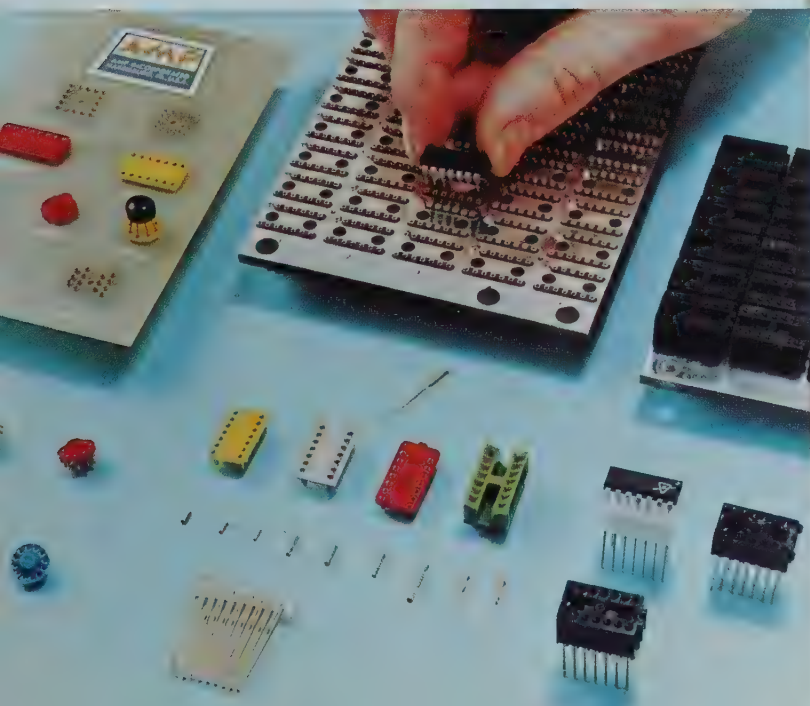
**Automotive and Appliance Fields.** The growing role of electronics and increased concern for reliability and maintainability in these fields are producing many opportunities for entirely new AMP products, and for modification of existing products to special requirements. Recent

Some of the more recent AMP electronic packaging devices for all types of electronic circuitry.



**Above**—Some of the newer AMP printed circuit board connectors.

**Below**—An entirely new type of microminiature connector for memory frames and transmission cable, as shown, as well as for multilayer integrated circuit boards.



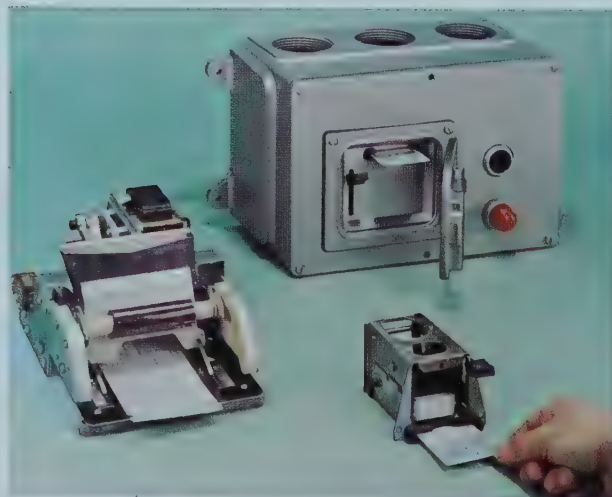
This hermaphroditic multiple connector uses modules of standard "M" series connectors to allow customized mixing of coaxial, power, and signal circuit contacts. The "plug" or cable half of the connector will mate with another plug to allow through connection of a cable when a piece of peripheral equipment is no longer needed.





**Above**—Some of the recent AMP mechanical connection products for application with hand tools, power tools, or machines.

**Left**—AMPACT “tool-less” splice under development for in-line connection of electric power cables. The great force required to make the connection is provided by a small, built-in powder charge which is actuated through a safety ignitor plug inserted during application. The ignitor is energized by a slight electrical charge supplied by a simple battery device.



New AMP card readers: (left) reader-imprinter which “reads” a credit card and imprints on a sales slip or other document, (right) miniaturized reader for vending applications and, (rear) a weatherproof version.



The High Voltage Divider, one of the first AMP products in a new family of special laboratory instruments.



examples include the printed circuit connector for the new Volkswagen fuel injection unit, fully pre-insulated strip form FASTON terminals for appliance connections, a splash-proof connecting system for truck wiring using post-insulated FASTON tabs and receptacles, and special AMPLIVAR terminals for connections on alternator coils.

Recent proposals of entirely new connection products include special terminals and splices for turn signal harnesses, multiple connectors designed to give improved mating with standard connection pins on automotive switches, a new type of contact for cartridge lamp socket assemblies, and a special printed circuit connector for anti-skid systems. We have also started to supply functional devices, such as plunger and slide switches, that are more reliable, economical, and easier to install. Finally, much of our recent efforts in special mechanical fasteners are directed at customer needs in these fields.

**Power and Communication Utilities.** We are making good progress in bringing new connection concepts into various sectors of the utility industry. AMPACT products are gaining broader use in electric power companies. The powder cartridge-actuated tools and wedge-type connectors provide fast, safe connections for a widening range of sizes of transmission and distribution lines. During the past year, we have developed waterproof enclosures to permit the use of AMPACT tools and connectors in underground residential distribution, or "URD" applications as shown on page 13. For in-line or through connections of overhead power cables, an internally fired, powder-actuated splice is in the late development stages. These unique connectors will require no tools since they will be ignited by a small electrical impulse from a battery device.

PICABOND pre-insulated splices and associated application tooling offer a faster, more certain method of splicing the thousands of wires in a typical telephone cable. With the number of telephone wire connections now approaching a billion per year in the U.S. alone, telephone companies are making increased use of this labor-saving method.

CATV systems are also finding that AMP's crimpable coaxial cable connectors offer excellent electrical performance at lower installed cost. We are working closely with cable manufacturers and major users in creating connectors for new types of coaxial cables being developed for CATV, telephone, defense systems, and related uses.

**Mechanical Connections.** We are continuing to extend our electrical connection capabilities into special non-electrical areas. Our first significant entry into the mechanical connection field was AMP-FIT crimpable fittings

for metal and plastic tubing. Additional sizes and techniques are steadily being added to handle larger and smaller sizes of tubing. Interesting new uses for AMP-FIT products are emerging and include easily installed, economical valves for throwaway refrigerant tanks and time-saving gas line connections for gas lanterns, grills and other outdoor fixtures.

During the past year a number of special mechanical fasteners were introduced. These included both metal and plastic items for fastening circuit boards to a chassis, attaching modules to a circuit board, connecting two panels or other objects together, and holding knobs on splines. Depending on the degree of automation required, we can provide manual tools, power tools, or machines to apply fasteners supplied either in single piece, tape-mounted, or continuous strip form.

**Programming Systems.** With the recent addition of a number of new models, AMP continues to lead in offering the widest choice of programming devices available from a single source. Since the mid 1950's we have offered patchcord programming systems for use where exacting performance and capacity to handle thousands of circuits are most important. In recent years, shielded and coaxial systems and lower-cost standard versions have been introduced.

After a number of recent additions, AMP card readers (which accept information via punched tabulating cards or plastic credit cards), now include various manually operated and electrically powered types in unenclosed, enclosed, and weatherproof versions. AMP card readers, including reader-imprinter versions, already appear in a variety of applications such as automatic batch weighing equipment, security systems, production control systems, process controls, test equipment, vending and dispensing equipment, and retail credit systems.

**Capacitor and Transformer Products.** For many years AMP has been a leader in the design and manufacture of special-purpose, high-voltage "power packages". Recent additions included new types of pulse modulators for airborne radar, power conversion units for image intensifiers, and power supplies for visual display equipment. Based on our extensive experience in this high-technology field, we are focusing new product efforts on several related areas. A product line of laminated, shielded bus bars for controlled power distribution within computer equipment was introduced. During the past year we also supplied custom-engineered, solid state relays for use in machine tool controls. Recently, we began a product family of precision laboratory instruments such as the High Voltage Divider (shown on the opposite page) and modular capacitor packs.





*Combined*

# AMP INCORPORATED &

*December 31*

	1968	1967
<b>CURRENT ASSETS:</b>		
Cash . . . . .	\$ 3,664,000	\$ 3,340,000
Marketable securities, at cost, which approximates market . . . . .	15,634,000	6,285,000
Receivables . . . . .	27,734,000	23,010,000
Inventories, at lower of cost, principally average, or market—		
Finished goods and work in process . . . . .	\$ 15,962,000	\$ 13,883,000
Purchased and manufactured parts . . . . .	13,503,000	14,636,000
Raw material . . . . .	8,309,000	7,183,000
Total inventories . . . . .	\$ 37,774,000	\$ 35,702,000
Prepaid expenses, etc. . . . .	2,331,000	1,709,000
Total current assets . . . . .	\$ 87,137,000	\$ 70,046,000
<b>PROPERTY, PLANT AND EQUIPMENT, At cost:</b>		
Land . . . . .	\$ 3,300,000	\$ 3,115,000
Buildings, leasehold improvements and rights . . . . .	22,132,000	21,664,000
Machinery and equipment, etc. . . . .	38,027,000	35,531,000
Machines and tools with customers . . . . .	17,322,000	15,134,000
	\$ 80,781,000	\$ 75,444,000
Less—Accumulated depreciation . . . . .	34,695,000	28,376,000
Property, plant and equipment, net. . . . .	\$ 46,086,000	\$ 47,068,000
<b>PATENTS, at a nominal value . . . . .</b>		
	\$ 1,000	\$ 1,000
	<u>\$133,224,000</u>	<u>\$117,115,000</u>

*The accompanying notes to the combined financial*



## Balance Sheets

### Subsidiaries and Pamcor, Inc.

	December 31	
	1968	1967
<b>CURRENT LIABILITIES:</b>		
Current portion of long-term debt . . . . .	\$ 2,295,000	\$ 1,200,000
Foreign bank obligations . . . . .	4,000,000	3,764,000
Accounts payable . . . . .	9,053,000	6,572,000
Accrued expenses . . . . .	8,085,000	5,931,000
Accrued taxes on income (less U.S. Treasury tax anticipation bills of \$3,900,000 in 1968) . . . . .	7,314,000	6,557,000
Total current liabilities . . . . .	\$ 30,747,000	\$ 24,024,000
<b>LONG-TERM DEBT (Note 3) . . . . .</b>		
	\$ 13,535,000	\$ 15,534,000
<b>DEFERRED INCOME TAXES . . . . .</b>		
	1,315,000	1,419,000
<b>INVESTMENT TAX CREDIT AND DEFERRED INCOME . . . . .</b>		
	2,030,000	1,844,000
<b>RESERVE FOR CONTINGENCIES APPLICABLE TO FOREIGN OPERATIONS . . . . .</b>		
	—	553,000
<b>SHAREHOLDERS' EQUITY:</b>		
AMP Incorporated—		
Common stock, without par value—		
Authorized 15,000,000 shares,		
issued 12,480,000 shares . . . . .	\$ 12,480,000	\$ 12,480,000
Pamcor, Inc.—		
Common stock, par value \$1.00 per share—		
Authorized 50,000 shares, issued 20,000 shares . . . . .		
	20,000	20,000
Retained earnings (Note 3) . . . . .		
	73,269,000	61,376,000
	\$ 85,769,000	\$ 73,876,000
Less—Treasury stock, at cost (Note 4) . . . . .		
	172,000	135,000
Total shareholders' equity . . . . .	\$ 85,597,000	\$ 73,741,000
	\$133,224,000	\$117,115,000

Statements are an integral part of these statements.



**COMBINED STATEMENTS OF INCOME  
AND RETAINED EARNINGS**

*AMP INCORPORATED & Subsidiaries and Pamcor, Inc.*

*For the Years Ended December 31*

	1968	1967
NET SALES . . . . .	\$167,172,000	\$146,469,000
COST OF SALES . . . . .	95,612,000	85,813,000
Gross income . . . . .	\$ 71,560,000	\$ 60,656,000
SELLING, GENERAL AND ADMINISTRATIVE EXPENSES . . . . .	39,213,000	35,482,000
Income from operations (after deducting depreciation of \$8,497,000 in 1968 and \$6,966,000 in 1967) . . . . .	\$ 32,347,000	\$ 25,174,000
OTHER DEDUCTIONS, Net . . . . .	1,038,000	1,291,000
Income before income taxes and loss on devaluation . . . . .	\$ 31,309,000	\$ 23,883,000
INCOME TAXES . . . . .	15,082,000	9,749,000
INCOME BEFORE LOSS ON DEVALUATION . . . . .	\$ 16,227,000	\$ 14,134,000
LOSS ON DEVALUATION OF FOREIGN ASSETS (4¢ per Endorsed Share) . . . . .	—	481,000
NET INCOME . . . . .	\$ 16,227,000	\$ 13,653,000
<i>Per Endorsed Share . . . . .</i>	<b>\$1.33</b>	<b>\$1.12</b>
<hr/>		
RETAINED EARNINGS, BEGINNING OF YEAR . . . . .	61,376,000	58,354,000
Add—Reversal of reserve for contingencies previously provided from retained earnings . . . . .	553,000	—
	\$ 78,156,000	\$ 72,007,000
LESS—		
Transfer to the Common Stock Account in connection with the 2-for-1 stock split as approved by the shareholders on April 27, 1967. . . . .	—	\$ 6,240,000
Cash dividends on common stock by:		
AMP Incorporated . . . . .	\$ 3,421,000	\$ 2,927,000
Pamcor, Inc. . . . .	1,466,000	1,464,000
Total dividends (40¢ and 36¢ per Endorsed Share) . . . . .	\$ 4,887,000	\$ 4,391,000
	\$ 4,887,000	\$ 10,631,000
RETAINED EARNINGS, END OF YEAR (Note 3) . . . . .	<b>\$ 73,269,000</b>	<b>\$ 61,376,000</b>

Net income reflects net income of Pamcor, Inc. of \$1,604,000 in 1968 and \$1,535,000 in 1967, after elimination of affiliated company profit in inventory.

*The accompanying notes to the combined financial statements are an integral part of these statements.*



## NOTES TO COMBINED FINANCIAL STATEMENTS—DECEMBER 31, 1968

### *AMP INCORPORATED & Subsidiaries and Pamcor, Inc.*

- (1) **Principles of Combination:** The financial statements of Pamcor have been combined with those of AMP and its subsidiaries (all wholly owned), since each company is owned beneficially by identical shareholders. Pamcor has no active subsidiaries and no affiliates other than AMP and its subsidiaries. By trust agreement, Bankers Trust Company holds all of the Pamcor common stock for the benefit of AMP common shareholders whose certificates are endorsed to show they are entitled to a proportionate interest in the Pamcor common stock held in the Trust. This interest is not transferable separately.

Intercompany and affiliated company accounts and transactions, including unrealized profits in inventory, were eliminated in consolidating and combining the financial statements of AMP, its subsidiaries and Pamcor.

- (2) **Foreign Operations:** As a result of including the accounts of all foreign operations, the combined financial statements as of December 31, 1968, include assets amounting to \$41,646,000 and liabilities amounting to \$21,789,000 or net assets of \$19,857,000. The additional net income, as a result of including these foreign operations, amounted to \$6,282,000 for the year 1968 and \$4,684,000 (before loss on devaluation of \$481,000) for the year 1967.

The accounts of the foreign operations have been converted to United States dollars at the official rates of exchange and there are no significant unrealized gains and losses thereon. The availability of remittances to the parent company is subject to the currency restrictions of the various countries. No provision has been made in consolidation for U. S. income taxes payable when dividends are received from foreign subsidiaries since AMP would receive a foreign tax credit which would substantially eliminate all U. S. income taxes on such dividends.

- (3) **Long-Term Debt:** Long-term debt at December 31, 1968, represents a 5½% note of \$5,000,000 (including \$1,250,000 due in 1969 and classified as a current liability) payable to a bank under a revolving credit agreement, a 6½% note of \$9,000,000 (including \$1,000,000 due in 1969 and classified as a current liability) due to an institutional lender, a foreign 20-year annuity loan of \$1,488,000 at 6% interest, and other foreign debt of \$297,000.

The revolving credit agreement permits AMP to borrow up to \$6,000,000 at 5½% and would expire March 15, 1969, but AMP, at its option, will elect to convert such borrowing into a term loan

payable thereafter in equal semi-annual installments to March 15, 1971. The agreement states that without the prior consent of the lender AMP and its domestic subsidiaries will not incur other future indebtedness in excess of \$25,000,000.

The agreement covering the amount due to the institutional lender provides for the repayment in equal annual installments over 9 years or, at the option of AMP, over 5 years without penalty. This agreement contains restrictions with respect to additional borrowings, maintenance of minimum working capital and certain other items. Payment of cash dividends and the purchase of the Company's common stock, etc., are limited to \$35,288,000 plus the entire net income of AMP and its domestic subsidiaries and Pamcor for 1969 and subsequent years.

- (4) **Stock Plus Cash Bonus Plan and Treasury Stock:** All of the Endorsed Shares held in the treasury (1968-254,282; 1967-273,559) are reserved for the payment of stock bonuses under the incentive Stock Plus Cash Bonus Plan adopted by the Board of Directors. The number of shares to be distributed is determined by the appreciation in the market value of the Company's stock. During the year ended December 31, 1968, treasury stock was increased through the purchase of 12,300 shares at \$427,000, and decreased through the distributions under the provisions of the Plan by 31,577 shares at a cost of \$390,000. For awards granted before and outstanding on December 31, 1968, and based on the market value as of that date, 154,000 shares would be distributed in the years 1969 to 1977.

- (5) **Employee Retirement Plans:** The Companies' employee retirement plans include insured contributory plans, a trustee, non-contributory plan, and a single lump sum indemnity payment plan. During the two years ended December 31, 1968, provisions aggregating \$1,659,000 in 1968 and \$1,463,000 in 1967 were made to cover current service cost on all plans plus amortization of past service cost over ten years on one of the plans. The cost of retirement benefits for past service has been fully funded except for this one plan which amounted to \$930,000 at December 31, 1968. The net assets of the plans exceeded the present value of vested benefits as of December 31, 1968.

- (6) **Depreciation Method:** Depreciation is computed by applying principally the straight-line method to individual items in order to apportion the cost of the item evenly over its estimated useful life.

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## AUDITORS' REPORT

To the Shareholders and Boards of Directors,  
AMP Incorporated and Pamcor, Inc.:

We have examined the combined balance sheet of AMP INCORPORATED (a New Jersey corporation) and subsidiaries and PAMCOR, INC. (an affiliated Puerto Rican corporation) as of December 31, 1968 and the related combined statements of income and retained earnings for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. Financial statements of the foreign subsidiaries were examined by other auditors and we were furnished with their reports on such financial statements. We have previously examined and reported on the financial statements for the preceding year.

In our opinion, based upon our examination and the reports of other auditors referred to above, the accompanying combined balance sheet and combined statements of income and retained earnings present fairly the combined financial position of AMP Incorporated and subsidiaries and Pamcor, Inc. as of December 31, 1968, and the results of their combined operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Philadelphia, Pennsylvania  
February 14, 1969

*Arthur Andersen & Co.*



## OFFICERS

U. A. WHITAKER

*Chairman of the Board*

G. A. INGALLS

*Vice Chairman of the Board*

S. S. AUCHINCLOSS

*President and Chief Executive Officer*

J. D. BRENNER

*Vice President, Manufacturing*

C. J. FREDRICKSEN

*Vice President and Chief Financial Officer*

WILLIAM C. LANGE

*Vice President, Director of Merchandising*

S. WILSON POLLOCK

*Vice President, Engineering and Research*

F. S. KUGLE

*Controller*

WALTER F. RAAB

*Treasurer*

OLON L. RHODE, JR.

*Secretary, General Legal Counsel*

## DIVISIONAL VICE PRESIDENTS

*(of AMP Incorporated only):*

JOHN E. EBERLE

*Connector and Component Products*

GERALD F. ENGLEHART

*International*

HERMAN C. HAAS

*Domestic Subsidiaries*

FRANKLIN E. HOWELL

*Industrial Sales*

KENNETH L. NEIJSTROM

*General Products*

WILLARD A. SMITH

*European Operations*

# AMP INCORPORATED

HARRISBURG, PA.

**Pamcor, Inc.**

SAN JUAN, P. R.

## BOARD OF DIRECTORS

\*S. S. AUCHINCLOSS

*President and Chief Executive Officer*

F. H. BOLAND

*Industrial Consultant*

(recently retired as Vice President,  
Manufacturing and Engineering,  
ACF Industries, Incorporated)

R. M. BRUMFIELD

*Chairman*

Potter & Brumfield Division,  
American Machine & Foundry  
Company

\*C. J. FREDRICKSEN

*Vice President and Chief Financial Officer*

F. C. HIXON

*President*

Midland Investment Company

\*G. A. INGALLS

*Vice Chairman of the Board*

C. L. KEISTER

*Chairman of the Board*

Dauphin Deposit Trust Company

J. T. SIMPSON

*Chairman of the Board*

Harsco Corporation

\*U. A. WHITAKER

*Chairman of the Board*

*\*Member of Executive Committee of  
the Board of Directors*

## THE ANNUAL SHAREHOLDERS' MEETINGS

The annual shareholders' meetings of AMP Incorporated and Pamcor, Inc. are held the fourth Thursday of April. Formal notices, proxy statements and forms of proxy will be mailed on or about March 21, 1969 to shareholders of record on March 7, 1969 as to the April 24, 1969 meetings at 2:00 P.M. at 15 Exchange Place, Jersey City, New Jersey.

## TRANSFER AGENTS

Bankers Trust Company  
16 Wall Street  
New York, N.Y. 10015

The Corporation Trust Company  
15 Exchange Place  
Jersey City, N.J. 07102

## REGISTRAR

Morgan Guaranty Trust Company  
of New York  
30 West Broadway  
New York, N.Y. 10015

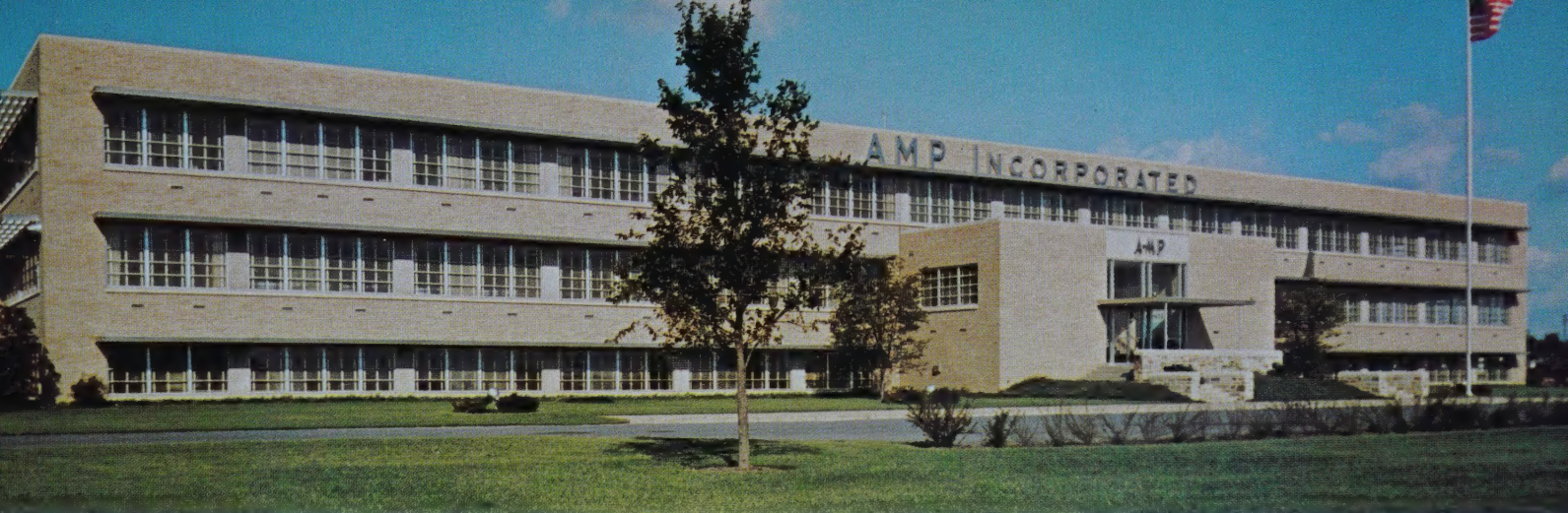
## LISTED

New York Stock Exchange

## AUDITORS

Domestic: Arthur Andersen & Co.  
Overseas: Price Waterhouse & Co.





AMP Headquarters—Eisenhower Blvd., Harrisburg, Pa.

### SUBSIDIARIES

(all wholly-owned and included in combined results)

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American Pamcor, Inc.  
Valley Forge, Pa.

AMP of Canada Ltd.  
Toronto, Canada

AMP de Mexico, S.A.  
Mexico City, D.F. Mexico

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AMP de France  
Paris, France

AMP Italia S.p.A.,  
Turin, Italy

AMP-Holland N.V.  
's-Hertogenbosch, Holland

Deutsche AMP G.m.b.H.,  
Frankfurt, Germany

Aircraft-Marine Products (Great Britain) Ltd.,  
London, England

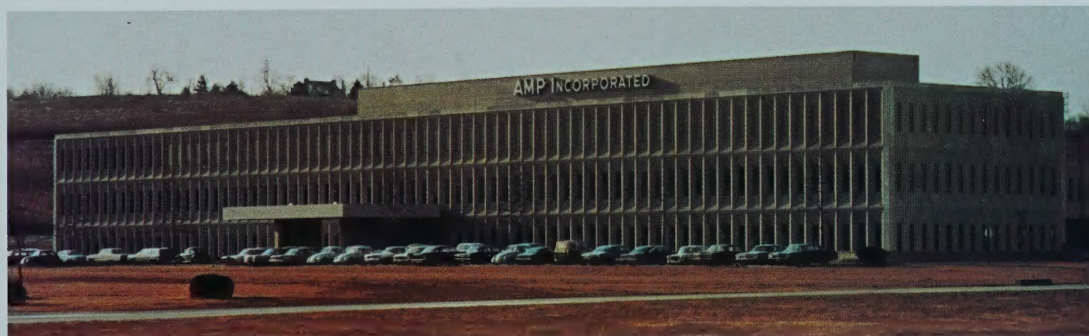
AMP Española, S.A.,  
Barcelona, Spain

Svenska AMP A B  
Stockholm, Sweden

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AMP (Japan), Ltd.,  
Tokyo, Japan

Australian AMP Pty. Limited  
Sydney, Australia



Newest and largest of AMP's engineering and administrative facilities—3705 Paxton St., Harrisburg, Pa.



The AMP advertisements shown here are part of a continuing series appearing in trade and business magazines. Each advertisement depicts one of the many markets to which AMP supplies electrical connection products. These examples are directed at the office equipment, avionic equipment, appliance, communications, and computer markets.



"How long has Xerox been specifying AMP products?"

"Year after year after year after year."

To give you copy after copy without a hitch, Xerox machines must be constructed with completely dependable parts. Like the two types of AMP circuit connectors shown. Both have qualified for Xerox equipment because they offer continuous, uniform reliability, and automated contact application resulting in low manufacturing costs.

These are some of the obvious reasons why AMP products have been in Xerox equipment since the earliest models.

We've applied the same techniques to electrical test equipment products in demand of other industries. Including years no doubt - and we've backed them up with worldwide engineering, manufacturing, marketing and technical facilities.

To find out how our ideas, products and services can help you, send for our descriptive brochure, "Ideas in Action - Worldwide".

Put your ideas into action with the help of AMP Engineering.

"I see the avionics industry put AMP in the cockpit."

"Yes. They're high on our weight and size."

Electronic interconnectors, to the communication (those shown above) lightness, ease of assembly, and one area where safety can be maintained.

AMP Incorporated Harrisburg, Pennsylvania

With the help of AMP Engineering... Worldwide.

"I see AMP is in harness with Whirlpool."

"Sure. AMP has always been wired into the best of appliances."

You can take trouble-free performance for granted on appliances like Whirlpool. That's because Whirlpool engineers demand Factory Specified Parts. AMP components like our circuit connectors and terminals meet all of their specifications in terms of uniform reliability, high automated production speeds and low total installed costs.

That's why we've been in the appliance business for many years - and the aerospace business and the automotive and the computer and the electronic business to name a few more. We offer a whole range of electrical wire connectors from the simplest to the most sophisticated and sensitive. All reliable, all economy-minded. And we've backed them up with worldwide engineering, manufacturing, marketing and technical facilities.

To find out how our ideas, products and services can help you, send for our descriptive brochure, "Ideas in Action - Worldwide".

Put your ideas into action with the help of AMP Engineering.

"I hear another telephone company is using AMP's high speed splicing method."

"Yes. We're part of a vast underground movement."

Telephone cables, underground or on a few hundred feet.

The remarkably trustworthy, it, superior, and action tool work speedily, accurately, easily, people total installed costs that are reduced to mere hours, saving billions.

AMP applies its trust in terminating. We've met the, maximum, experience to our activities with activities around the globe.

In our marketing subsidiary to other product lines, of for our brochure.

AMP Incorporated Harrisburg, Pennsylvania

With the help of AMP Engineering... Worldwide.

"Say something in RCA Computer language."

"AMP ECONOMATION."

When a computer talks, there can be no slip of the tongue.

That's why RCA's Spectra 70 engineers picked AMP's coaxial cable and multi-circuit connectors: signal fidelity in the face of outside electrical interference and mechanical reliability at critical interfaces like rack and panel junction points.

These are but two of the many AMP terminals, wires and wiring devices used in the vital interconnection system of Spectra 70 and in products of other leading computer manufacturers.

In addition, AMP's crimping method of attaching connectors to wire is a demonstrably economical.

Through ECONOMATION, AMP's fast-assembly techniques reduce total installation costs while increasing circuit reliability. We call that Economation.

We speak the same language in every industry using electrical/electronic circuits. And we back the program with engineering, manufacturing, marketing, and technical services and facilities worldwide.

Find out more about AMP's products, techniques and Economation in our specific brochure, "Ideas in Action - Worldwide". Send for a copy.

AMP Incorporated Harrisburg, Pennsylvania

AMP Incorporated Harrisburg, Pennsylvania

With the help of AMP Engineering... Worldwide.